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To: All AQS Stakeholders

Subject: Enhancements to Monitor Metadata

Date: December 6, 2013

This memo describes a set of changes to monitor metadata that are being made to the AQS software and database, and will be available for use after December 7, 2013. (Monitor metadata is information about the monitors themselves as distinct from ambient air quality measurements taken by the monitor.) This memo will describe the changes, provide information about how to submit and use the new metadata, and describe the transition period during which both the old metadata and new metadata will be accepted by AQS.

The AQS Federal team plans to conduct a webinar to demonstrate the new/changed AQS processes and to answer questions on Friday, December 13, 2013, at 11:00 AM Eastern. The URL for the webinar is: <https://epa.connectsolutions.com/aqs-monitor-metadata/> The webinar will last for 1 hour. When you get to the login page, please enter as a guest. The audio for the webinar will be a phone line, call-in numbe: 866-299-3188 with conference code 919 541 5265#

Change Details

Changes to Monitor Metadata Elements

Monitor Type:

In the past, Monitor types have had a variety of meanings, including: Administrative classification of monitor (e.g. SLAMS, Tribal), the associated monitoring network (e.g. NCORE, NATTS, PAMS), and other information such as excluded from Design Value calculations (Non-Regulatory). With this change, Monitor Type will be reserved to only mean administrative classification of monitor. All other information is being moved to other fields.

The following shows the new mapping of this information:

1. Monitor Type: One of the following:
 - a. SLAMS: State or Local air monitoring stations for parameters (pollutants and/or meteorological data) addressed by 40 CFR Part 58.
 - b. TRIBAL: Air monitoring stations operating under the authority of a Federally recognized tribal agency for parameters addressed by 40 CFR Part 58.
 - c. SPECIAL PURPOSE: A monitor that an agency has designated as “Special Purpose” in its annual monitoring network plan for parameters addressed by 40 CFR Part 58.
 - d. INDUSTRIAL: A monitor that is operated by a private industry entity rather than under the control of a State, Local, or Tribal government.
 - e. EPA: A monitor that is operated by EPA or an EPA contractor for parameters addressed by 40 CFR Part 58.
 - f. NON-EPA FEDERAL: A monitor operated by another Federal agency for parameters addressed by 40 CFR Part 58.

- g. SPM-OTHER: A monitor for a parameter **not** addressed by 40 CFR Part 58. (i.e. It will not be allowed for criteria pollutants or other parameters associated with a monitoring network such as NCORE, PAMS or NATTS.)

Note: After the change, a monitor will only be allowed to have a single monitor type on any specific day.

- 2. Network Affiliation: The associated monitoring network. A monitor will be allowed to be affiliated with any number of networks at the same time. Present Network Affiliations: {PAMS, UNOFFICIAL PAMS, TRENDS SPECIATION, SCHOOL AIR TOXICS, PROPOSED NCORE, NCORE, IMPROVE, CASTNET, SUPPLEMENTAL SPECIATION, VOLUNTARY SCHOOL AIR TOXICS, NATTS, PSD}
- 3. NAAQS_Exclusion: Replaces “NON-REGULATORY” monitor type for criteria pollutants. This data element is used to request that a monitor be excluded from Design Value calculations. Note: After this change, all requests for NAAQS Exclusion must be approved by the corresponding Regional Office before the data will be excluded from Design Value calculations; all Non-Regulatory types present before the change are automatically marked as approved.
- 4. QA Collocation: AQS has never looked at the “QA COLLOCATED” monitor type for handling collocated data. With this change, transactions with the “QA Collocated” Monitor Type will be rejected with an error. QA Collocation should be indicated via the MONITOR COLLOCATION fields (via either the MJ batch transaction or the COLLOCATION tab on the Maintain Monitor form.).

Note: The examples of the new Maintain Monitor forms at the URL below provide an example of a monitor that initially has the monitor types (of SPECIAL_PURPOSE, SLAMS, NCORE, and NON-REGULATORY), and shows how they map to the final monitor types of SPECIAL_PURPOSE and SLAMS, and the network affiliation of NCORE and a MONITOR NAAQS EXCLUSION.

Monitor Methods

As was described in the June 28, 2013 AQS User Notice¹, a new Monitor Metadata element has been created for Monitor Method. This new element identifies the Method Code (for the monitor’s Method of Collection and Analysis) for a specified period of time.

New Batch Transactions

The new monitor metadata can be controlled (inserted, updated, or deleted) via a new set of batch transactions: MM – Monitor Method, MN – Monitor Network Affiliation, MX – Monitor NAAQS Exclusion. (Note: Initially, only delimited transactions (flat file) are supported; the AQS XML schema has been updated for the new data elements, and we will support XML submissions as soon as resources allow.)

Additionally, AQS has supported the designation of a “Primary” monitor at a site since 2008; however, until this time, this information could only be entered and edited via the Maintain Site form, that is part of the AQS web application. With this change, a new batch transaction is being implemented, MO – Primary Monitor Period, that will allow batch entry and extraction of this metadata.

¹ <http://www.epa.gov/ttn/airs/airsaqs/memos/To%20All%20AQS%20Users.pdf>

The new transaction formats are contained in the document at the following URL:
http://www.epa.gov/ttn/airs/airsaqs/memos/Monitor-Metadata_Transactions.pdf

Note: The metadata associated with all of the new batch transactions can be extracted/exported from AQS via the AMP500 – Extract Site-Monitor Metadata standard report.

New Maintain Monitor Form Tabs

New tabs are being added to the Maintain Monitor form for each of the new transaction types (MM, MN, and MX). These are presented in the screen images in the document at the following URL: http://www.epa.gov/ttn/airs/airsaqs/memos/MaintainMonitor_Changes_2013-11-23.pdf

Also, since having a tab for each new transaction type would cause too many tabs to fit across the top of the form, the tabs have been moved to the right edge of the form, where they can all be seen without scrolling.

XML

The initial batch transactions for submitting the new monitor metadata are delimited transactions only. The updated XML schema (version 3.0) is in the Exchange Network deployment pipeline, and should be available very soon. AQS will be enhanced to accept the new schema in early 2014.

Requested Actions for Agencies That Submit Data to AQS

1. Review this email and send any questions or concerns me at Coats.Robert@EPA.GOV.
2. As soon as convenient after Dec. 7, 2013, run an AQS Monitor Description Report, AMP390, for your area of interest (e.g. State, County, Agency) and look at the changes to the monitor metadata and notify us of any concerns.
3. Begin updating your submission processes for creating or updating Monitor Types to use the new MN and MX transactions for network affiliations and non-regulatory monitor exclusions from Design Values. If your state uses a software data management system that will take several months to update, please let use know, and if possible when you expect to have your system converted. We are committed to continue supporting the old interface until everyone has the opportunity to upgrade to the new one.
4. Whenever you create a new monitor, please submit a Monitor Method (MM) transaction for the monitor, and when you change the sampler to a new method, please submit an update to close the old Monitor Method, and an insert to create the new Monitor Method.
5. For agencies that report multiple methods to the same AQS monitor (State-County-Site-Parameter-POC or Tribe-Site-Parameter-POC), as per the June 28, guidance memo², please create a separate monitor in AQS for each sampler. We will work with you to move the Raw Data with each method to its corresponding monitor.

Transition Plan

Monitor Type Transition

The existing monitor metadata will be moved from the MONITOR_TYPE_ASSIGNMENTS table to the new database tables on Saturday, December 7, 2013. After that time, AQS will accept changes to the new metadata elements via the new batch transactions and forms.

It is understood, however, that many agencies that submit data have processes in place for creating or maintaining this metadata via the old batch transaction formats, and that it will take time to modify these processes to use the new transactions. In order to support this transition, AQS will continue to accept this information on the MC – Monitor Type transaction, but will transparently apply the changes (Inserts, Updates, or Deletes) to the new database tables; this transition support will remain in place until November 30, 2014.

Note: After December 7, 2013, the Maintain Monitor form will only show this metadata on the new tabs. For example: If a monitor previously had a monitor type assignment of PAMS, this will now show up in Maintain Monitor on the “Network Affiliations” tab, but not on the Monitor Type tab.

Monitor Method Transition

A conversion script has already been run to create the Monitor Method metadata for all active AQS monitors.

While creating the new monitor metadata, it was observed that a small subset of the monitors (~1%) have Raw Data that has a different method code each day. It is expected that this issue was caused for Particulate Matter monitors where every-day sampling (Required Collection Frequency of ‘1’) is achieved by submitting the measurements from multiple samplers to a single AQS “monitor” – parameter and POC at the site. EPA Guidance² now directs that each sampler be submitted to a separate AQS POC. For the monitors where a different method has been observed for each day, the AQS Federal team will work with the submitting agency to create new monitors (parameter and POC) for each distinct method code at the original monitor, and to move the Raw Data with that method to the new monitor. Note: We can only do this for those cases where the data pattern indicates that there are multiple samplers with different methods being used to achieve every-day sampling. In cases where there are separate samplers of the same method being used to achieve the desired frequency under one POC, AQS will be unable to detect and resolve these cases; therefore, agencies are expected to partition the two samplers into different POCs.

² <http://www.epa.gov/ttn/amtic/files/20130618TechnicalNotePOC.pdf>